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Workplace Safety
Management Control Review

MANAGEMENT CONTROL REVIEW: MANAGEMENT OF HAZARDOUS MATERIALS IN NMFS SCIENCE CENTERS

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MANAGEMENT CONTROL REVIEW

MANAGEMENT OF HAZARDOUS MATERIALS IN NMFS FISHERIES SCIENCE CENTERS

Headquarters:
Office of Management and Budget
Science Centers:
Alaska, Northeast, Northwest, Southeast & Southwest

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL MARINE FISHERIES SERVICE

SEPTEMBER 2003

MCR REFERENCES

Northeast Fisheries Science Center Documents

- NEFSC Hazardous Materials Management Plan
- NEFSC Chemical Hygiene Plan
- NEFSC Hazard Communication Program
- NEFSC Recycling and Hazardous Waste Minimization Policy
- NEFSC Respiratory Protection Program
- NEFSC Personal Protective Equipment Program
- NEFSC Facility Specific Emergency Procedures & Contingency Plan
- NEFSC Chemical Procurement Policy
- NEFSC Facility Specific SPCC Plans
- NEFSC New Employee Safety Orientation Guide for Supervisors
- NEFSC Hazardous Waste Laboratory Satellite Accumulation Area
- NEFSC Guide to Shipping Samples
- NEFSC Guide to Transporting Hazardous Materials in Government Vehicles

Southeast Fisheries Science Center Documents

- SEFSC Chemical Hygiene Plan http://www.sefsc.noaa.gov/labsafety.jsp
- SEFSC Hazard Communication Training http://www.sefsc.noaa.gov/hazardcommunication.jsp
- DOC Phased Facility Security Program
- Environmental Resource Center Training Certificates, October 2002
- SEFSC Hazardous Materials Transportation http://www.sefsc.noaa.gov/hazmattrans.jsp

Southwest Fisheries Science Center Documents

The following references are posted on the SWFSC intranet site (http://lajolla.noaa.gov/om/EHS/Default.htm)

- Environmental, Health & Safety
- EHS Orientation
- Emergency Plan
- Receiving Radioactive Material
- EHS/Safety.htm
- Chemical Compatibility Storage Guidelines
- Chemical Hygiene Plan
- Hazard Communication Plan
- Hazardous Material Transportation Procedures
- Hazardous Materials Business Plan Storage Cabinets

Northwest Fisheries Science Center Documents

- Radioactive Materials License, Number 46-06377-04 (amendment 36), NOAA Northwest Fisheries Science Center, Seattle WA.
- NWFSC Chemical Hygiene Plan
- NWFSC Waste Management Plan
- NWFSC Pollution Prevention Plan
- NWFSC Biological Safety Manual
- NWFSC Bio-safety Policy
- NWFSC Operating Procedures for using Radioisotopes

- NWFSC Respiratory Protection Program
- NWFSC Eye Protection Policy
- NWFSC Emergency Procedures & Contingency Plan
- NWFSC Safety and Environmental Compliance Training Plan

Alaska Fisheries Science Center Documents

- AFSC Chemical Hygiene Plan
- AFSC Waste Management Plan (includes P2 plan)
- AFSC Standard Operating Procedures for Hazardous Materials and Processes
- AFSC Emergency Procedures and Contingency Plan
- AFSC Hazardous Materials Management System
- AFSC Spill Prevention, Control and Countermeasures Plan
- NOAA Environmental Management System

Memoranda

- Memorandum, M. Sissenwine to distribution, "Purchase Card Restrictions", July 8, 1998
- Memorandum, J. Kennedy to J. Pierson, "Management Control Review of Hazardous Materials", June 25, 2003
- Memorandum, J. Kennedy to J. Pierson, N. Williams, "Response to Comments on 6/25/03 Narrative MCR", July 1, 2003
- Memorandum, J. Kennedy to J. Pierson, "MCR – Test of Controls", August 26, 2003

Administrative Orders

- NOAA Administration Order 216-17, NOAA Environmental Compliance Program, September 28, 1998

Code of Federal Regulations

- Title 10 Code of Federal Regulations, Nuclear Regulatory Commission
- Title 29 Code of Federal Regulation, Occupational Safety and Health Administration
- Title 40 Code of Federal Regulation, Environmental Protection Agency
- Title 49 Code of Federal Regulation, Department of Transportation

EXECUTIVE SUMMARY
MANAGEMENT OF HAZARDOUS MATERIALS
IN NMFS FISHERIES SCJENCE CENTERS

I. INTRODUCTION

Hazardous material is used throughout the Fisheries Science Centers of the National Marine Fisheries Service (NMFS) in support of the agency's scientific mission. Hazardous material is:

- Any material that is a "health hazard" or "physical hazard" as defined by the Occupational Safety and Health Administration (OSHA) in Title 29 Code of Federal Regulations (CFR) Part 1910.1200;
- Any material that is an inventory under Hazardous Chemical Reporting (Title 40 CFR Part 370) or an environmental release under the Toxic Chemical Release Reporting: Community Right to Know (Title 40 CFR Part 372), or a hazardous waste under Title 40 CFR Part 262;
- **Any** material that, when being transported, is a risk to public safety or an environmental hazard **as** identified by Title 49 CFR Part 172;
- Any material that is a special nuclear source or by-product material defined in Title 10 CFR or is regulated or referred to as radioactive.

The use of hazardous material is controlled to protect human health and the environment. The primary Federal regulations include:

- 49 CFR Department of Transportation – regulates delivery, identification or labeling, appropriate temporary storage, training, and record keeping;
- 29 CFR Occupational Safety and Health Administration – regulates appropriate storage, identification or labeling, use, training, and record keeping;
  10 CFR Nuclear Regulatory Commission – regulates appropriate storage, identification or labeling, inventory, use, disposal, training, and record keeping;
- 40 CFR Environmental Protection Agency – regulates appropriate storage, identification or labeling, inventory, use, disposal, training, and record keeping.

This Management Control Review (MCR) examined if management controls in the Science Centers comply with these and other applicable laws, regulations and policies (Appendix 1: References)

JI. METHODOLOGY

The MCR Team consisted of: the MCR Coordinator from the Headquarters Office of Management and Budget (F/MB); the Team Leader who was the NMFS Environmental CoplianceOfficer from F/MB;and one or more representatives from each Science Center who wcre responsible for managing hazardous material as Safety and Environmental Compliance Officers (SECO's), or had technical knowledge or experience in that area. (Appendix 2: Personnel)

The MCR Team repared a Workplan to complete the MCR over a six-month period (April to September 2003.) (Appendix 3: Workplan)

The SECO's prepared short "narratives" that described the general framework in which hazardous materials are managed in each of the Science Centers. They covered the three management processes (or "event cycles") that a hazardous material normally follows in chronological order: (1) procurement (2) inventory control and management and (3) disposal. The laboratories in a Center may manage these activities differently with regard to facility personnel with access to government credit cards and visiting scientists performing research studies. (Appendix 4: Narratives)

The MCR Team identified the most significant negative events (or "risks") that might occur if all or a part of these event cycles was not carried out as planned. These risks were (1) employees are exposed to unhealthful levels of hazardous materials (2) hazardous material is lost, misused or misappropriated and (3) hazardous material is disposed of improperly, The MCR Team also identified an "objective" for each risk that described the conditions it wants to occur. Each objective had several safeguards or "controls" within each event cycle that managers routinely performed. (Appendix 5: Risks, Objectives, Control Techniques)

Finally, the SECO's performed a "test" of at least one management control associated with the procurement and inventory of hazardous material. The tests were conducted on-site to establish if the control was being used routinely and achieving the stated objective. Each test was planned in advance, and the results were recorded. (Appendix 6: Tests, Findings, Conclusions, and Recomrnendntions)

III. TESTS, FINDINGS AND CONCLUSIONS

These tests focused on the larger laboratories with more hazardous materials and exposed personnel. Eighty percent of the tests evaluated laboratory chemicals and the remaining twenty percent evaluated radioisotopes.

All of the Science Centers have written policies/procedures that apply to the procurement, receipt, distribution, inventory, use, and disposal of hazardous materials. All of the Science Centers also conduct and record appropriate employee training. Only 20% of the Science Centers have a formal process to review visiting scientist research programs. Visiting scientists present the greatest risk of introducing non-authorized hazardous material into the laboratory setting because they are not familiar with facility policies, procedures, and/or personnel; however, no non-authorized materials was found during the tests.

The Alaska Fisheries Science Center (AKFSC) has the only formal, computer-based tracking system in NMFS. This Hazardous Materials Management System uses bar codes to manage both samples and hazardous materials in real time. Upon receipt, the sample or material is assigned a bar code that is recorded in the inventory database. The quantity and storage location is also recorded. For a hazardous chemical, an internal dictionary has a Material Safety Data Sheet containing the procedures for safe handling, storage, spill response, and disposal. Procurement and inventory checks in the other Centers might be improved by a computer-based tracking system similar to the AKFSC Hazardous Materials Management System or the NOAA Chemical Information Management System.

The tests provided reasonable assurance that management controls are in place and operating as intended. Each Science Center has adequate policies and procedures in place to comply with existing Federal, state and local laws and regulations as well as NOAA Administrative Order 216-17. The Science Centers have also been audited periodically by regulatory agencies and by in-house staff or contractors.

IV. NATIONAL RECOMMENDATIONS

Rased on these findings and conclusions, the MCR Team made the following recommendations that will be implemented by all Fisheries Science Centers:

(1) Ensure that the material safety data sheet(s) for each hazardous material are available to employees in their work areas.
Responsible Official: Science Center Deputy Directors
Completion Date: October 2003

(2) Ensure that hazardous material that is no longer in the original container is labeled appropriately.
Responsible Official: Science Center Deputy Directors
Completion Date: October 2003

(3) Ensure that a trained person manages the disposal of any hazardous waste. Limit the authority to sign hazardous waste manifests to personnel who have the written approval of the Science Center Deputy Director.
Responsible Official: Science Center Deputy Directors
Completion Date: October 2003

(4) Determine if biological agents monitored by the Centers for Disease Control (CDC) or other potentially harmful biological agents are used in NMFS facilities. If these biological agents we present and not disposed of immediately, take these actions: assign, in writing, a biological officer; establish a biological review committee; and follow all biological safety precautions recommended by the CDC. Require the written approval of the biological officer for the procurement of potentially hazardous biological agents in the future.
Responsible Official: Science Center Deputy Directors
Completion Date: November 2003

(5) Determine if radiological isotopes controlled by the Nuclear Regulatory Commission (NRC) are in the Centers. If these radiological agents are present and not disposed of immediately, take these actions: assign, in writing, a radiation safety officer; maintain [redacted] NRC permit; and follow all NRC recommendations. Require the written approval of the radiation safety officer for the procurement of radiological materials in the future.
Responsible Official: Science Center Deputy Directors
Completion Date: November 2003

(6) Establish an "authorized use list" of hazardous materials and their prescribed quantities that scientific staff has reviewed and approved for use by specific programs, laboratories, or personnel. Do not allow employees to purchase hazardous materials that are not on their organization's list. Establish a process to quickly review requests to alter this list.
Responsible Official: Science Center Deputy Directors
Completion Date: December 2003

(7) Establish a policy to review, approve and oversee hazardous materials that visiting scientists, students, guests or others may bring into NMFS facilities. This policy should document the proper procedures for inventory control, and safe use, storage and disposal of the hazardous materials. Require written approval. from the Safety and Environmental Compliance Officer or other official, such as the Laboratory Director or lab supervisor.

Responsible Official: Science Center Deputy Directors
Completion Date: December 2003

(8) Conduct checks of hazardous material at least semiannually. Conduct one of these checks as part of the annual inventory. Include spot-checking of hazardous material usage, presence of Material Safety Data Sheets, and labeling as part of the other check. Conduct a cost-benefit ~~analysis~~ to assess the applicability of implementing a system similar to the AKFSC's HMMS in the other Centers.
Responsible Official: Science Center Deputy Directors
Completion Date: January 2004

(9) Assess the storage conditions of all hazardous materials that are either owned or stored by NMFS. Identify any situations that might not conform to the National Fire Protection Association standards. If any situation cannot be corrected immediately, notify the Safety and Environmental Compliance Officer.
Responsible Official: Science Center Deputy Directors
Completion Date: January 2004

(10) Assess the need for employees to ship hazardous materials. If there is a need, ensure that each employee who packages hazardous material completes the Department of Transportation (DOT) mandated training every three years and/or the International Air Transport Association (IATA) training every two years. Make the certificate awarded to an employee after passing the certification test readily available if a shipper or compliance inspector requests it.
Responsible Official: Science Center Deputy Directors
Completion Date: January 2004

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[1] The Pacific Islands Region ~~and~~ Center had not been established when the MCR was initiated, ~~and~~ could not be included in the MCR.